## **ABSTRACT**

The non-invasive corrosion sensor includes a heat sink, a peltier, a reference standard and a data acquisition device. The peltier has a first side and a second side, the peltier communicates with the heat sink such that the first side of the peltier is maintained at a common temperature. The reference standard and the test piece communicates with the second side of the peltier; and the data acquisition devise is able to record and compare the differences in temperatures of the test piece and reference standard.